SONY

3-769-167-21 (1)

FM/AM CASSETTE CAR STEREO

XR-350

OPERATING INSTRUCTIONS

Before operating the unit, please read this manual thoroughly and retain it for future reference.

OWNER'S RECORD

The model and the serial numbers are located on the top. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. XR-350 Serial No._____

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FEATURES

The XR-350 is a combined cassette player and an FM/AM tuner equipped with a built-in amplifier.

Tuner section
- **Memory preset tuning function** allows you to store a total of 18 stations in memory.
- **Precise tuning is possible** with the digital synthesizer system.

Cassette deck section
- **Automatic Music Sensor (AMS)** to locate the beginning of a selection during playback.

General
- **Direct function system** allows you to listen to the program source selected last directly.
- **Maximum power output of 25 W + 25 W.**

PRECAUTIONS

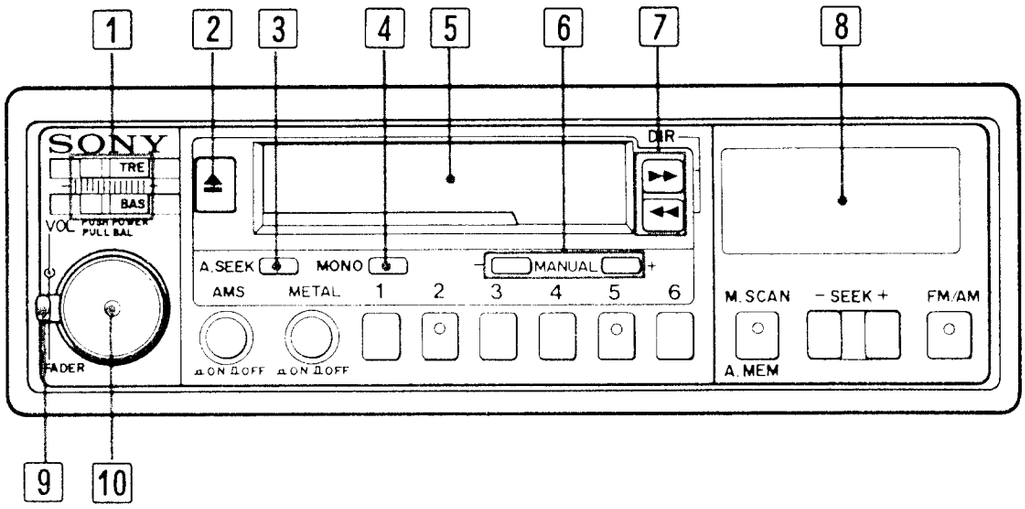
- If your car was parked in direct sunlight and there was a considerable rise in temperature inside the car, allow the unit to cool off before operating.
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.

Protection circuit

The built-in power amplifier employs a protection circuit to protect the speakers if the amplifier malfunctions. When a protection circuit activates, there will be an abrupt loss of sound from the speakers.
Particularly, when a speaker with a low input impedance (less than 3.2 ohms) is connected to the unit, the sound will be discontinued. This, however, is not a problem. If this happens, turn the volume down a little.

If you have any question or problem concerning your unit that is not covered in this manual, please consult your nearest Sony dealer.

LOCATION AND FUNCTION OF CONTROLS



[1] TRE (treble) control
BAS (bass) control

[2] ⏏ (eject) button

[3] A.SEEK (automatic seek) button
Seeks and tunes in a stronger FM station of next higher frequency automatically when the received station is too weak.

[4] MONO (monaural) button
Press to reduce noise during reception of a weak FM stereo program. The sound will be monaural instead.

[5] Cassette insertion door

[6] MANUAL + / – buttons
Press to tune in the desired station manually.

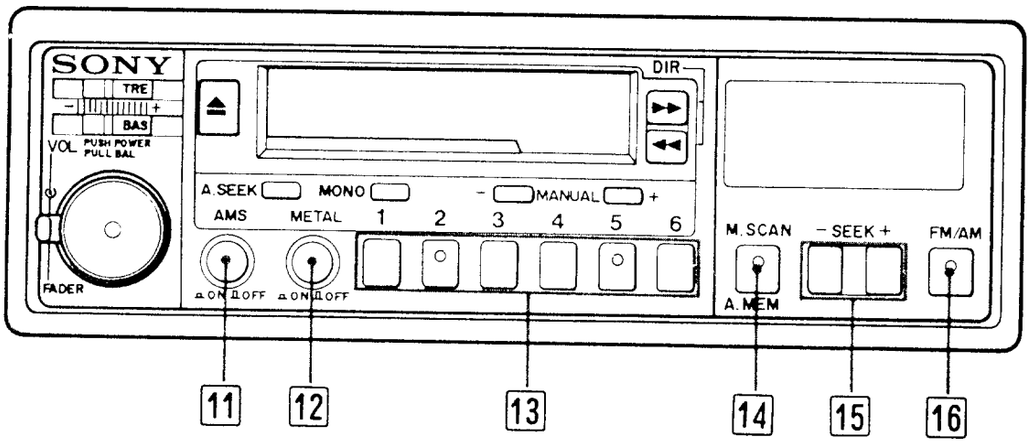
[7] DIR (tape transport direction), ▶▶/◀◀ (fast winding) buttons
To change the tape transport direction, press ▶▶ and ◀◀ at the same time.
To release ▶▶, press ◀◀.
To release ◀◀, press ▶▶.

[8] Display window

[9] FADER control
Turn to adjust the output volume of the front and the rear speakers. To reduce the volume of the rear speakers, turn clockwise. To reduce the volume of the front speakers, turn counterclockwise.

[10] VOL (volume) control/PUSH POWER switch/PULL BAL (balance) control

Function	
VOL control	Turn to adjust the volume.
PUSH POWER switch	Press to turn the unit on and off.
PULL BAL control	Pull and turn to adjust balance of the left and the right channel output.



11 AMS (Automatic Music Sensor) button

Use to locate the beginning of a selection during playback.

12 METAL button

Depress when listening to CrO_2 (TYPE II) or metal (TYPE IV) tapes.

13 Preset number buttons

14 M.SCAN (memory scan)/A.MEM (automatic memory) button

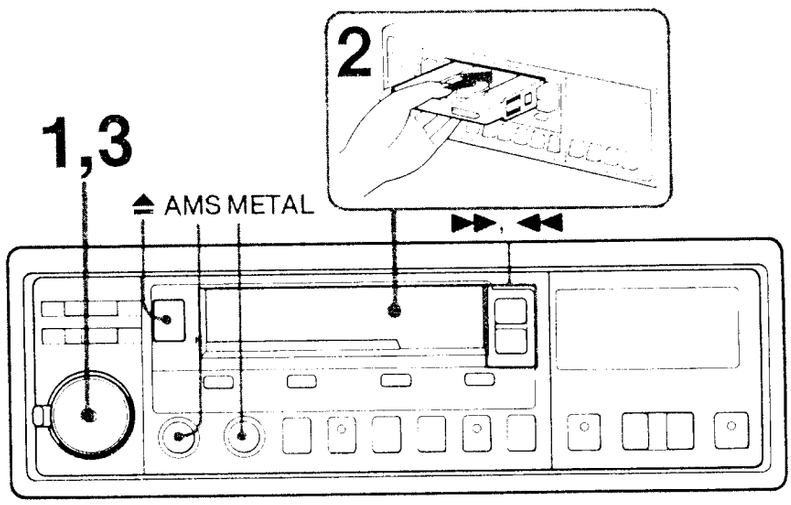
Function	
M.SCAN	Press for a moment to scan the preset stations automatically.
A.MEM	Press for more than two seconds to memorize the stations automatically.

15 SEEK + / − buttons

Press to search for the desired station.

16 FM/AM select button

PLAYBACK



1 **Press PUSH POWER.**

2 **Insert a cassette.**
Playback starts automatically.

3 **Adjust the volume.**

Options

To listen to the other side of the cassette	Press ▶▶ and ◀◀ at the same time.
To stop playback and listen to the radio	Press ⏏. The unit enters the radio mode.
To stop playback and switch off the unit	Press ⏏ and then press PUSH POWER.

Before turning off the unit:
Be sure to eject the tape to avoid tape damage.

To adjust the unit to each tape type

Tape type	
CrO_2 (TYPE II) Metal (TYPE IV)	Depress METAL (⏏ ON).
Normal (TYPE I)	Release METAL (⏏ OFF).

Side of the cassette being played back or fast-wound:

Indicator	
▶	The side facing upward
◀	The side facing downward

TO LOCATE THE BEGINNING OF A SELECTION —AUTOMATIC MUSIC SENSOR (AMS)

1 Depress AMS.

2 Press ▶▶ or ◀◀, referring to the following table.

Indicator	Cassette side being played	Desired selection	
		Next selection	Current selection
▶	Side facing upwards	Press ▶▶.	Press ◀◀.
◀	Side facing downwards	Press ◀◀.	Press ▶▶.

The desired selection may not be located if...
—there is noise in the space between selections.
—the space is less than 4 seconds long.
—the ▶▶ or ◀◀ button is pressed immediately before or after the desired selection, or within the blank space.

Playback may begin in the middle of the selection
when AMS is activated, as the followings are treated as blanks:
—a long pause in the selection
—a passage of low frequencies or very low volume
—gradual increase or decrease of volume, as in some classical music

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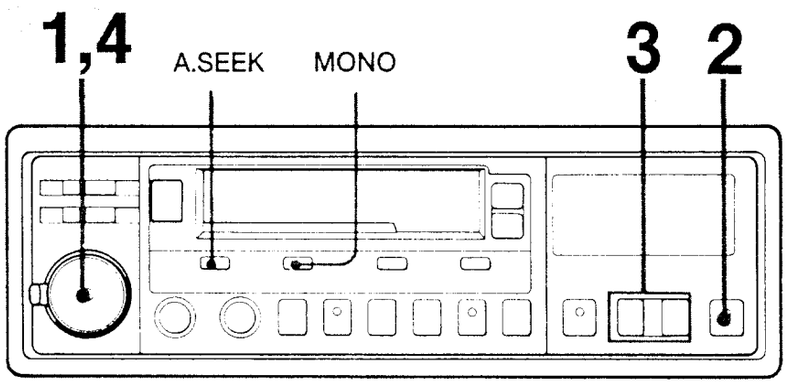
Cassette care
- Avoid touching the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- Keep cassettes away from equipment with magnets such as speakers and amplifiers, as erasure or distortion on the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures or moisture.

Note on the 120-minute cassette
The use of a 120-minute cassette tape is not recommended except for long continuous playback.

Cleaning the head
Clean the tape head every two weeks to enjoy optimum hi-fi stereo sound. Use a commercially available cleaning cassette.

AUTOMATIC TUNING



1 **Press PUSH POWER.**

2 **Press FM/AM to select the desired band.**

3 **Press SEEK + or −.**
The unit automatically scans for a station and stops when a station is tuned in.
Repeat pressing the button until the desired station is tuned in.

4 **Adjust the volume.**

Options

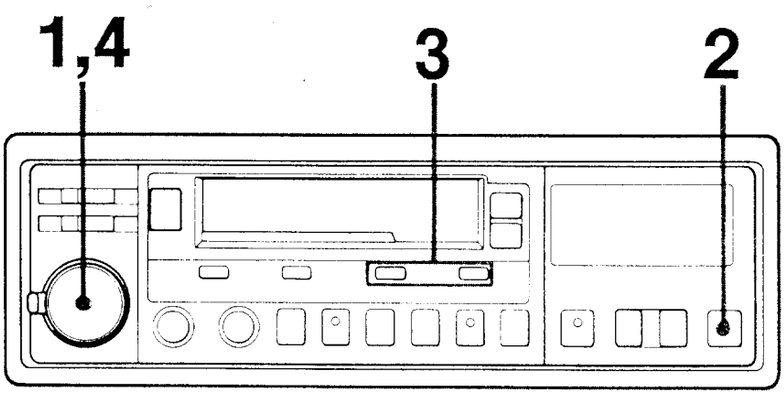
To stop the radio and listen to a tape	Insert a cassette.
To stop the radio and switch off the unit	Press PUSH POWER.

For better reception of a weak FM stereo station
Press MONO. ("MONO" appears on the display window.)
The sound will be monaural instead.

To tune in a stronger FM station automatically when the received station is too weak
Press A.SEEK. ("AUTO" appears on the display window.)
A next higher frequency FM station is tuned in.

When an FM stereo program of sufficient signal strength is tuned in:
"STEREO" appears on the display window.

MANUAL TUNING



1 Press PUSH POWER.

2 Press FM/AM to select the desired band.

3 Press MANUAL + or − until the desired station is tuned in.

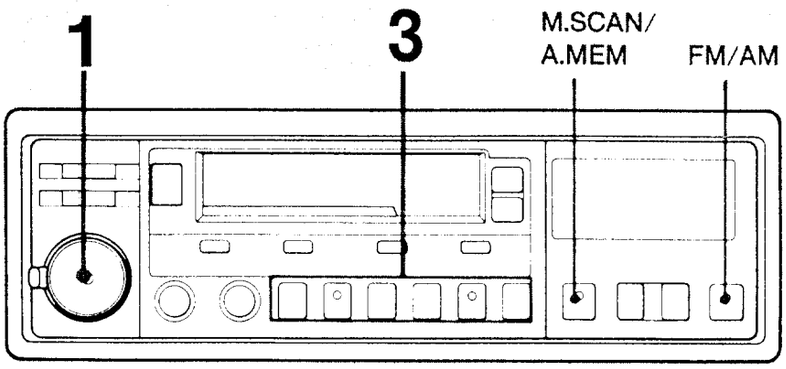
4 Adjust the volume.

Warning
While driving, keep your eyes on the road and use the automatic tuning or the memory preset tuning!

MEMORY PRESET TUNING

TO MEMORIZE STATION FREQUENCIES

The unit can memorize up to 6 stations each band, one on each preset number, in any desired order. (A total of 18 stations can be memorized.)



1 Press PUSH POWER.

2 Tune in the desired station.

3 **Keep the desired preset number button pressed until the momentarily muted sound is restored.**
The station has got memorized.

Repeat these steps for each station.

TO TUNE IN A PRESET STATION

1 **Press FM/AM to select the desired band.**

2 **Press the desired preset number button.**

To memorize the stations automatically
Press M.SCAN/A.MEM for more than two seconds.
The unit scans for the stations, and memorizes them on the preset numbers in order of frequency and of the preset number. (Scanning starts from the frequency indicated on the display window.)
When any station is now tuned in:
The station is memorized on the preset number 1.
When any preset number is indicated on the display window:
The stations are memorized on from the next preset number to the preset number 6.

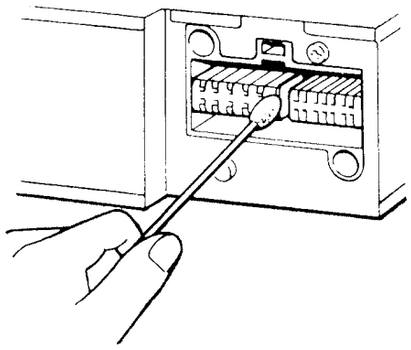
The previously memorized station will be erased when:
You enter a new station from the same band on the same number preset button.

To survey what is being broadcast on the preset stations
Press M.SCAN/A.MEM momentarily. Each memorized station will be scanned for a few seconds. To stop scanning, press M.SCAN/A.MEM again at the desired program.

MAINTENANCE

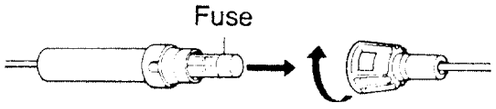
CLEANING OF THE CONNECTOR

To secure good connection, clean the connector at the rear with a cotton swab moistened with alcohol, etc.



HOW TO REPLACE THE FUSE

If the fuse blows, check the power connection and replace the fuse.



Warning
Use only a 1 and an 8 ampere fuse.
Use of a higher amperage fuse may cause serious damage to the unit.

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
11 watts per channel minimum continuous average power into 4 ohms, both channels driven, from 30–20,000 Hz with no more than 1% total harmonic distortion.

OTHER SPECIFICATIONS

Power amplifier section

Outputs — Speaker outputs (sure seal connectors)
Preamp outputs (phono jacks)
Speaker impedance — 3.2–8 ohms
Maximum power output — 25 W + 25 W (at 4 ohms)*
* Measured at 14.4 V

Cassette player section

Tape track — 4-track 2-channel stereo
Frequency response — 40–16,000 Hz
Signal-to-noise ratio
With type II, IV cassette
58 dB (A-weighted)
With type I cassette
55 dB (A-weighted)
Wow and flutter — 0.15% (WRMS)

Tuner section

System — Superheterodyne tuner
Computerized quartz-locked synthesizer system
Antenna terminal
FM/AM external antenna connector
FM/AM power antenna relay control lead

FM tuner section

Tuning range — 87.9–107.9 MHz
Intermediate frequency — 10.7 MHz
Usable sensitivity — 15 dBf (75 ohms)
Sensitivity at 50 dB quieting — 20 dBf (75 ohms)
Selectivity — 70 dB at 400 kHz
Signal-to-noise ratio — 65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz — 0.9% (stereo), 0.5% (mono)
Separation — 35 dB at 1 kHz
Frequency response — 30–15,000 Hz
Capture ratio — 2.0 dB

AM tuner section

Tuning range 530 1,610 kHz
Intermediate frequency
450 kHz
Sensitivity 35 μV

General

Tone controls Bass ±8 dB at 100 Hz
Treble ±8 dB at 10 kHz
Output lead Power antenna relay control lead
Power requirements
12 V DC car battery (negative ground)
Dimensions Approx. 178 × 50 × 165 mm (w/h/d)
(7 1/8 × 2 × 6 1/2 inches)
not incl. projecting parts and controls
Mounting dimensions
Approx. 182 × 53 × 145 mm (w/h/d)
(7 1/4 × 2 1/8 × 5 3/4 inches)
not incl. projecting parts and controls
Weight Approx. 1.4 kg (3 lb 2 oz)
Accessories supplied
Mounting hardware (1 set)
Fuses (1 set)

Design and specifications subject to change without notice.